The Future of Strawberry Production

A Senior Project

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Introduction

California's agriculture industry is greatly diverse, with strawberries as a sector that most native Californians wouldn't recognize as a large contributor to California's agricultural economy. Within the last couple of years, strawberry production has undergone massive changes that are rapidly modifying the way strawberries are cultivated. The future of strawberry production will have completely new methods for growing, fumigating, and harvesting in just five to ten years (Guthman, 2016). The Cal Poly Strawberry Center opened in 2014 with a mission to "increase the sustainability of the California strawberry industry through research and education that addresses industry needs" (Cal Poly Strawberry Center, 2018). The Strawberry Center is working alongside the Agricultural Education and Communications department as well as the BioResource and Agricultural Engineering (BRAE) department to create a video about the future of strawberry production. This project will include collecting interviews of strawberry growers and their personal opinions on where the strawberry industry is headed. The BRAE students are designing an automated system which captures pictures of the strawberries in various stages of ripeness. The remote controlled system is a solar charged, cart-like structure that travels between rows of plants with the intent to collect data and therefore decrease labor costs, which will in turn decrease strawberry prices. We will collaborate with each other to collect these interviews as well as showcase this automated system in a 2-3 minute video.

Background

Strawberry Production

Strawberry production in California began to take off in 1918 and boomed in the early 1950's. Strawberry production in California has grown from just over 20,000 acres harvested in the 50's to over 40,000 acres harvested today (California Strawberry Commission, 2017). Despite intense urbanization of California's population, strawberry producers have doubled the amount of acreage harvested (California Strawberry Commission, 2017). Overall, California agriculture grossed nearly $50 billion in 2015; of that, strawberries accounted for $2.6 billion (CDFA, 2015). Even with changing regulations, such as the token strawberry fumigant, methyl bromide, being phased out, the industry is still improving profitability and making an economic impact for California. Science, research, and technology are contributing factors to the rapid change and growth in strawberry production, according to Dr. John Lin, Production Automation Manager of Cal Poly's Strawberry Center.

Video

Video has become a major component of our personal lives as well as a huge driver in the business world. The uniquely compelling nature of video, engaging multiple senses in an easy-to-understand, information-dense format, has made it widely popular in the daily lives of most Americans (Tsur, 2017). Video has proven to be a massively powerful tool, helping improve comprehension, retention, discovery, and accessibility (Tsur, 2017). Video marketing provides marketers with an attractive, versatile, and extremely shareable medium to reach their audiences (Sukharj, 2017). According to Diode Digital, online video is 600% more effective than print and direct mail combined when used as a marketing tool. Here are a few facts supporting the idea of video usage: 75 million people in the U.S. watch online videos daily, nearly 50% of all videos watched is on a mobile device, mentioning the word 'video' in an email subject line increases the

click through rate by 13%, and videos around two minutes long get the most engagement (Sukharj, 2017). With video production becoming more easily accessible and the equipment becoming increasingly cost effective, the world of video is here to stay (Collins & Conley, 2018).

Methodology

This study is qualitative; the research includes interviews of strawberry growers throughout California with the idea of getting a scope of future strawberry production. These interviews will help gather information about strawberry growers and where they see the industry going in 5-20 years. Topics such as fumigation, greenhouse production, water supply, labor, and robot technology will be covered. The interview consists of ten questions, designed for 2-3 different strawberry growers. The first interview was held at the Cal Poly Strawberry Center and the interviewee was Dave Murray of A&W (Andrew and Williamson Fresh Produce). Michael Christensen from Driscoll's provided the second interview, and the third interviewee declined the opportunity to be interviewed. Further footage was also collected from the Cal Poly Strawberry Center field day in July of 2017.

The instruments used in data collection include: video cameras, voice recorders and microphones, as well as computers to put the videos into useable footage. The final product will be completed by Cal Poly's Brock Center for Agricultural Communications and consist of a video put together of the interviews, futuristic harvesting equipment, and other materials collected, which can be shown to inform the public about the future of strawberry production. The video is scheduled to be completed soon after Fall 2018 when the BRAE students complete their portion of the automation videos. In the meantime, meetings with the Strawberry Center, the Brock Center and the BRAE Department will take place to advance the storyboard of the author's project.

Results

Upon collecting the interviews and footage needed to make the project video, the author has gone through and sorted out the most valuable footage by listing the file name/number, the person interviewed and their title or position, along with the time stamp of the clips. This information will be sent to the Brock Center to complete the video for the Cal Poly Strawberry Center.

Recommendations

Should this project be repeated, the author suggests a variety of recommendations. To start off, speak with the Strawberry Commission early on in the project process about previous work, projects, and goals, to not overstep boundaries as well as gain support for the project. Make sure the student or operator is equipped to run the recording audio and video technology. Create a storyboard that is agreed upon by all parties involved. Gather more interviews so there is a wide variety of content to choose from. Have several growers listed by the Strawberry Center and Commission that are known and have already agreed to be interviewed about futuristic topics.